LESSON PLAN

Unit 8. DAMAGE CONTROL **X-XXX-XXX2 Rev B**

Topic 8.1 Damage Control

CLASS PERIODS: 1
LAB PERIODS: 0

Enabling Objectives:

4.1 **IDENTIFY** the purpose of Damage Control, including Shipboard Closure, in accordance with Damage Control 3 & 2, NAVEDTRA 10572

4.2 **IDENTIFY** Watertight Integrity in accordance with Damage Control 3 & 2, NAVEDTRA 10572

4.3 **IDENTIFY** the procedures to Open and Close Watertight Doors in accordance with Damage Control 3 & 2, NAVEDTRA 10572

4.4 **IDENTIFY** Material Conditions of Readiness, including Damage Control Emergencies and Alarms, in accordance with Damage Control 3 & 2, NAVEDTRA 10572

4.5 **IDENTIFY** General Quarters in accordance with Damage Control 3 & 2, NAVEDTRA 10572

Trainee Preparation Materials:

A. Trainee Support Materials:

1. None

B. Reference Publications:

1. None

Instructor Preparation:

A. Review Assigned Trainee Material

B. Reference Publications:

1. Damage Control 3 & 2, NAVEDTRA 10572
2. TM, Surface Ship Firefighting, NSTM-Chapter 555, Volume 1, NSTM-S9086-S3-STM-010/CH-555 V1

C. Training Materials Required:

1. Transparencies
   a. Circle William Classification, 8-1-6
   b. Circle Xray and Circle Yoke Classification, 8-1-8
   c. Circle Zebra Classification, 8-1-9
   d. Class "A" Fire, 8-1-14
   e. Class "B" Fire, 8-1-15
   f. Class "C" Fire, 8-1-16
   g. Class "D" Fire, 8-1-17
   h. Damage Control, 8-1-1

i. Dog Zebra Classification, 8-1-10
j. Fire Triangle, 8-1-12
k. Flooding caused by collision, 8-1-11
l. Hull Structure, 8-1-2
m. Summary, 8-1-18
n. Tetrahedron and Fire Triangle, 8-1-13
o. William Classification, 8-1-7
p. Xray Classification, 8-1-3
q. Yoke Classification, 8-1-4
r. Zebra Classification, 8-1-5

Topic 8.1 Damage Control

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
1. Introduction	1. Establish Contact. Write name on VAP board. Introduce Yourself. Damage Control is an ALL HANDS responsibility. The Navy has developed special equipment, techniques, and training to ensure all personnel are capable of properly executing damage control procedures. In this topic, we will discuss Damage Control, Shipboard Closures, Watertight Integrity, and Material Conditions of Readiness. We will also discuss procedures to Open and Close Watertight Doors. State Lesson Objectives. Reference Damage Control 3 & 2, NAVEDTRA 10572.
2. Damage Control a. Purpose:	2. Show Transparency 8-1-1, Damage Control.

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(1) Take all practical preliminary measures to prevent damage.	
(2) Minimize and localize damage as it occurs.	
(3) Accomplish emergency repairs as quickly as possible, restore equipment to operation, and care for injured personnel.	
b. The ship's ability to perform its mission will depend on Damage Control effectiveness.	
c. Shipboard Closures	c. Show Transparency 8-1-2, Hull Structure.
(1) Purpose - aids in maintaining ship's bouyancy.	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(2) Accomplished through various material conditions of readiness to maintain the requirement for watertight, airtight, fire-tight, and fume-tight integrity.	

3. Watertight Integrity

   a. Established when the ship was built.

   b. May be reduced or destroyed through:

      (1) Enemy action

      (2) Storm damage

      (3) Collision

      (4) Stranding

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(5) Negligence	
c. The material conditions of readiness in effect will also increase or decrease the ship's level of watertight integrity.	
4. Procedures to Open and Close Watertight Doors	
a. Purpose - to maintain watertight integrity.	
b. Procedures:	
(1) To Open - loosen and remove dogs on hinge side, then remove dogs on wedges. This will release any pressure against the door.	
(2) To Close - set all dogs opposite the hinges, set two dogs on hinge side then set remaining ones. Last, tighten all in same sequence using a wrench.	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
5. Material Conditions of Readiness	
a. Purpose - provides different degree of water tightness and protection for the ship.	
b. Has three degrees of readiness:	
(1) Xray - provides the least amount of protection.	(1) Show Transparency 8-1-3, Xray Classification.
(2) Yoke - set at sea and in-port during wartime, and in-port outside normal working hours.	(2) Show Transparency 8-1-4, Yoke Classification.
(3) Zebra - provides maximum protection during battle. Set automatically when general quarters is sounded.	(3) Show Transparency 8-1-5, Zebra Classification.
c. Damage Control Classifications	

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DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(1) Circle William - is applied to ventilation fittings and certain access openings, normally open during all material conditions. Closed only to prevent Chemical, Biological, Radiological (CBR) contamination.	(1) Show Transparency 8-1-6, Circle William Classification.
(2) William - is applied to sea suction valves that provide water for fire protection and mobility, normally open and running.	(2) Show Transparency 8-1-7, William Classification.
(3) Circle Xray and Circle Yoke - permits access to battle stations, transfer of ammunition, and access to vital parts for inspections during GQ and may be opened without permission, but must be closed when not in use.	(3) Show Transparency 8-1-8, Circle Xray and Circle Yoke Classification.
(4) Circle Zebra - may be opened during general quarters to allow preparation and distribution of food; also, used for cooling vital spaces. A guard is posted so openings may be shut quickly if necessary.	(4) Show Transparency 8-1-9, Circle Zebra Classification.

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(5) Dog Zebra - applied to access weather decks not equipped with light traps or door switches that turn off lights during darken ship conditions.	(5) Show Transparency 8-1-10, Dog Zebra Classification.
d. Damage Control Emergencies	
(1) Flooding - to fill a space with water. Affects ship stability. Must be controlled promptly and efficiently.	(1) Show Transparency 8-1-11, Flooding caused by collision.
(2) Fire	
(a) Fire is a constant threat onboard ship and personnel must be prepared at all times to help prevent or extinguish fires rapidly.	
(b) Three components are required for a fire. They are:	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
1) Combustible material	
2) A sufficiently high temperature	
3) A supply of oxygen	
(c) These components are referred to as the "Fire Triangle" and consist of:	(c) Show Transparency 8-1-12, Fire Triangle.
1) Fuel	
2) Heat	
3) Oxygen	
(d) Fires are controlled and extinguished by removing one side of the triangle.	(d) Reference TM, Surface Ship Firefighting, NSTM-Chapter 555, Volume 1, NSTM-S9086-S3-STM-010/CH-555 V1.

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(e) Fire Tetrahedron	(e) Show Transparency 8-1-13, Tetrahedron and Fire Triangle.
1) The fourth side of fire.	
2) The fire triangle does not fully describe the flaming combustion requirements of a fire.	
3) This requirement is called an uninhibited chemical reaction.	
4) Flaming combustion stops when one of the four sides of the fire tetrahedron is removed.	
(f) Classes of Fire	

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DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
1) Class "A" - involves solid substances that causes ashes such as wood, cloth, and paper. Water is the primary extinguishing agent.	1) Show Transparency 8-1-14, Class "A" Fire.
2) Class "B"	2) Show Transparency 8-1-15, Class "B" Fire.
a) Flammable liquids such as oil, gasoline, paint, etc.	
b) For small fires, or in a confined space like a paint locker, carbon dioxide and halon are good extinguishing agents.	
c) For large fires, other extinguishing agents such as water fog and foam must be used.	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
d) Never use a solid water stream.	
3) Class "C"	3) Show Transparency 8-1-16, Class "C" Fire.
a) Fires in electrical/electronic equipment.	
b) Primary extinguishing agents are carbon dioxide or halon, if available.	
c) Fog may be used as a last resort.	
4) Class "D"	4) Show Transparency 8-1-17, Class "D" Fire.
a) Combustible metals such as magnesium, sodium, and titanium.	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
b) Large amounts of low velocity fog can be used to cool the material down below its ignition temperature.	
c) Never use a solid water stream. Water in contact with this type of fire can produce highly explosive hydrogen gas.	
e. Emergency Alarms	
(1) Purpose - to make a ship-wide announcement to set the material condition specified.	
(2) Types	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
(a) General alarm - preceding the alarm, word is passed for all hands to man their battle stations, and the type of emergency is identified. Alarm actuator is color coded RED.	
(b) Chemical alarm - sounded when a CBR attack is detected, whether the ship is at general quarters or not. Actuator is color coded GREEN.	
(c) Collision alarm - takes precedence over, and overrides any other alarm being sounded. Actuator is color coded YELLOW.	
6. General Quarters	
a. Purpose - set condition of the ship to full readiness for battle.	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
b. Actions	
(1) All combat stations are manned	
(2) Material conditions of readiness is set to Zebra	
(3) All repair parties are manned	
7. Summary	7. Show Transparency 8-1-18, Summary.
a. Damage Control	
b. Shipboard Closures	
c. Watertight Integrity	
d. Procedures to Open and Close Watertight Doors	

DISCUSSION POINT	RELATED INSTRUCTOR ACTIVITY
e. Material Conditions of Readiness	
f. Damage Control Emergencies	
g. Emergency Alarms	
8. Assignment	
a. None	
9. Evaluation	
a. None	